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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,700	02/03/2004	Tetsuo Yamada	1034-04	1306

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EXAMINER	
KOSLOW, CAROL M	
ART UNIT	PAPER NUMBER

1755

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/770,700

Applicant(s)

YAMADA ET AL.

Examiner

C. Melissa Koslow

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1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-12 is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 13, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 2 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/30/04, 2/3/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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The Japanese references cited in the information disclosure statement of 3 February 2004 were considered with respect to the explanation of these references in the specification.

EP 1,278,250 cited in the information disclosure statement of 30 April 2004 was considered with respect to the provided English abstract.

Claim 1 is objected to because of the following informalities: The format of this claim makes it difficult to understand. It is suggested to rewrite the claim so it is clear that the percentages in paragraph 7 refer to the sialon content. Appropriate correction is required.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims are improperly dependent on claims 7 and 8 since the nitrogen gas atmosphere in this claim is different from the nitrogen containing inert gas atmosphere.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,657,379.

This reference teaches a white light emitting device comprising a blue emitting light emitting diode and a transparent medium comprising a sialon based phosphor, which has a medium particle size in the range of 0.5-5 microns. The taught sialon based phosphor has the formula $M_{(p-0.04)/2}Si_{12-p-q}Al_{p+q}O_qN_{16-q} \cdot 0.04Eu^{2+}$, where p is 0-2.5, q is 0.5-3 and M can be Ca. This formula

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overlaps the claimed formula. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). This formula shows that the phosphor is composed of 100% α -sialon. Column 5, line 1 teaches to use high purity materials, which suggests that the total amount of metal impurities that should as low as possible, which would overlap the claimed ranges. The reference suggests the claimed phosphor and device.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,657,379 in view of U.S. patent 6,066,861.

As discussed above, U.S. patent 6,657,379 suggests the claimed phosphor and device. It does not teach the maximum particle size of the phosphor used in the taught device. U.S. patent 6,066,861 teaches the maximum size should be 20 microns to ensure the phosphor composition has long term stability. Thus one of ordinary skill in the art would have found it obvious to limit the maximum phosphor particle size to 20 microns in the device of U.S. patent 6,657,379 for the reasons in U.S. patent 6,066,861. The references suggests the claimed phosphor.

Claims 7-12 are allowable over the cited art of record.

Claims 2 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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There is no teaching or suggestion in the cited art of record of an -sialon phosphor doped with Ce, Pr or La, and of the processes of claims 7-14.

U.S. patent 4,845,059 is cited as of interest since it teaches a similar process as that claimed, but it does not teach or suggest the claimed silicon source. The reference teaches amorphous silicon nitride that does not contain the required oxygen content. U.S. patent 6,657,379 it teaches a similar process as that claimed, but it does not teach or suggest the claimed calcium source or silicon source. The taught calcium nitride is not a substance that will thermally decompose to form CaO and the taught silicon nitride is not indicated as amorphous and containing 1-5 wt% oxygen.

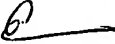
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
March 25, 2005


C. Melissa Koslow
Primary Examiner
Tech. Center 1700